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EXAMINER	
CHAKOUR, ISSAM	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/552,149	FREY ET AL.	
	Examiner	Art Unit	
	ISSAM CHAKOUR	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12,15-27 and 29-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12,15-27 and 29-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This office action is responsive to Applicant's arguments made in the remarks filed on 04/21/2011.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 12, 29, and 32 are rejected under 35 U.S.C. 102(e) as being anticipated over Ghosh (USPPA 2003/0161343) in view of Jokiaho et al. (Jokiaho, US Patent 5,889,770) further in view of Lee et al. (Lee, USPPA 2009/0093243).

2. Regarding claims 12, 29, and 32 Ghosh teaches a method and a corresponding radio communication system and subscriber station for transmitting data in a radio communications system, comprising:

providing a common channel allocated concurrently (e.g., dedicated shared channel or DSCH) to a plurality of subscribers for data transmission between a base station and subscriber stations of the subscribers (See [0016]);

taking measurements of transmission quality of the common channel (e.g., measurement report such as measuring QoS or channel strength) for each of the subscriber stations and making them available to the base station (See [0014]); and

transmitting from the base station (e.g. Node B) a first message to a controlling radio network controller allocated to the base station (See [0026] lines 1-5 and figure 1).

Ghosh does not expressly teach taking measurements in the subscriber stations and transmitting the measurements to the base station.

In the same field of endeavor, Jokiaho discloses taking measurements in the subscriber station and transmitting the measurements to the base station (See Col 8 lines 22-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ghosh's invention such that the measurements are handled at the mobile station as disclosed by Jokiaho so to lessen measurements computational load

on the base station and provide the prompt channel quality information.

Ghosh in view of Jokiaho does not expressly teach transmitting from the base station a first message to a controlling radio network controller allocated to the base station when the measurements show that the transmission quality does not meet a defined criterion, the first message containing information about the transmission quality and an identifier of at least one particular subscriber station for which the measurements indicated that the transmission quality meets a second criterion.

However, in the same field of endeavor Lee discloses transmitting from the base station a first message (e.g. RL parameter update request message) to a controlling radio network controller allocated to the base station (See [0146] lines 7-10, [0054], and [0147] lines 2-3) when the measurements show that the transmission quality does not meet a defined criterion (e.g. threshold corresponding to lower than a good channel quality, see [0164] lines 1-5, note that the change in radio link is radio channel state or condition see [0048] lines 1-5), the first message containing information about the transmission quality (See [0047]) and an identifier of at least one particular subscriber station for which (See [0008], lines 5-8, note that the RL parameter or the first message maybe HS-SCCH, see also [0030] lines 1-6) the measurements indicated that the transmission quality meets a second criterion (e.g. bad quality, see [0164] lines 3-5 and [0048] lines 1-5). Since Lee also suggests the measurement reporting to of the channel quality (See [0048] lines 3-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the limitation taught by Lee in Ghosh's invention in view of

Jokiaho in order to enable adaptive resource allocation based efficient channel measurement update.

2. Claims 15, 23-27, 29-31, and 33 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Ghosh in view of Jokiaho further in view of Lee, as applied to claims 12 and 29, and further in view of Kroth et al (USPPA 2005/0239460).

3. Regarding claims 15 and 30, Ghosh in view of Jokiaho and Lee discloses the method and the radio communication system in accordance with claims 12 and 29 respectively, Ghosh further teaches the method wherein each of the subscriber stations has a serving radio network controller corresponding thereto which is responsible for configuration of the respective subscriber stations (See [0014]).

Ghosh in view of Jokiaho and Lee does not explicitly teach the method wherein said method further comprises transmitting a second message from the controlling radio network controller to the serving radio network controller allocated to each of the at least one particular subscriber station.

However, Kroth teaches transmitting a second message from the controlling radio network controller to the serving radio network controller allocated to each of the at least one particular subscriber station (See paragraph [0034], lines 11-12). Note that Jokiaho discloses that the measurements are performed by each one of the plurality of subscriber's station wherein said method further comprises transmitting the measurements to the base station (See Col 8 lines 22-26).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Kroth's limitations with the invention taught by Ghosh in view of Jokiaho and Lee because the base-station provides feedback by the provision of the measurements done by the subscriber's station such as pilot strength signal, signal to interference plus noise ratio, and data queue. These latter measurements are reported to the SRNC and therefrom to the corresponding CRNC for appropriate mitigation of low QoS.

Consider claim 23, Ghosh in view of Jokiaho, Lee, and Kroth teaches the limitation in accordance with claim 15. Ghosh in view of Jokiaho, Lee does not teach deriving, by the controlling radio network controller, a suggested solution for a change of the configuration of the subscriber stations from the first message, and wherein the second message includes the suggested solution

Kroth further teaches the method comprising deriving, by the controlling radio network controller, a suggested solution (see paragraph [0034], line 11) for a change of the configuration of the subscriber stations from the first message, (See paragraph [0031]), and wherein the second message includes the suggested solution (see paragraph [0034], lines 8-13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kroth's limitations with the invention taught by Ghosh in view of Jokiaho, Lee, and Kroth in order to implement the compensation of the QoS in accordance with the change in channel quality.

With respect to claims 24 and 26, Ghosh in view of Jokiaho, and Lee discloses the method according to claim 12, Ghosh in view of Jokiaho and Lee does not expressly

teach the method wherein each of the subscriber stations has a serving radio network controller corresponding thereto which is responsible for configuration or control of the respective subscriber stations, and wherein said method further comprises transmitting a second message from the controlling radio network controller to the serving radio network controller allocated to each of the at least one particular subscriber station.

Kroth however teaches the method wherein each of the subscriber stations has a serving radio network controller corresponding thereto which is responsible for configuration or control of the respective subscriber stations (See figure 1 and paragraph [0034]), and wherein said method further comprises transmitting a second message from the controlling radio network controller to the serving radio network controller allocated to each of the at least one particular subscriber station (See paragraph [0034], lines 11-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Kroth's limitations with the invention taught by Ghosh in view of Jokiaho and Lee because the base-station provides feedback by the provision of the measurements done by the subscriber's station such as pilot strength signal, signal to interference plus noise ratio, and data queue. These latter measurements are reported to the SRNC and therefrom to the corresponding CRNC for appropriate mitigation of low QoS.

Regarding claims 25 and 27, Ghosh in view of Jokiaho, Lee, and Kroth teaches the method in accordance with claims 24 and 26 respectively, as mentioned above. Ghosh in view of Jokiaho and Lee fails to teach deriving, by the controlling radio

network controller, a suggested solution for a change of the configuration of the subscriber stations from the first message, and wherein the second message includes the suggested or recommended solution.

Kroth however, further discloses the method comprising deriving, by the controlling radio network controller, a suggested solution for a change of the configuration of the subscriber stations from the first message, and wherein the second message includes the suggested or recommended solution (See paragraph [0034] and [0035]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kroth's limitations with the invention taught by Ghosh in view of Jokiaho, Lee, and Kroth in order to implement the compensation of the QoS in accordance with the change in channel quality.

Regarding claim 31, Ghosh in view of Jokiaho, and Lee discloses a method in accordance with claim 12, Ghosh in view of Jokiaho, and Lee does not teach the method wherein the measurements of transmission quality are based on at least one of a transmission rate via the common channel and determining a ratio of a number of elapsed timers relative to a total number of allocated timers. However, Kroth teaches measurements of transmission quality are based on at least one of a transmission rate via the common channel and determining a ratio of a number of elapsed timers relative to a total number of allocated timers (See [0027] line 8, note that when measuring transmission data, timers are inherent for measuring, the data transmitted, which elapses the timer for measuring ongoing transmission, and the time assigned for transmission of a unit data, so as is known in the art, it is the time of a given data unit

divided by the allotted transmission interval).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the additional limitation taught by Kroth in Ghosh's invention in view of Jokiaho, Lee and Kroth in order to determine the rate of the data frames to be transmitted in accordance with the assigned quality of service.

Consider claim 33, Ghosh discloses a method for transmitting data in a radio communications system in which a plurality of subscriber stations use a shared channel (e.g., dedicated shared channel or DSCH) for exchanging data with a base station (See [0016]), comprising:

measuring a transmission quality of the shared channel for each of the subscriber stations (e.g., measurement report such as measuring QoS or channel strength, see [0014])

transmitting the measured transmission quality to the base station; and transmitting a first message from the base station to a controlling radio network controller controlling the base station (See [0026] lines 1-5 and figure 1), the message containing information about the transmission quality of the at least one subscriber (See [0014]);

Ghosh does not teach expressly measuring a transmission quality of the shared channel in the subscriber stations;

In the same field of endeavor, Jokiaho discloses taking measurements in the subscriber station and transmitting the measurements to the base station (See Col 8 lines 22-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ghosh's invention such that the measurements are handled at the

mobile station as disclosed by Jokiaho so to lessen measurements computational load on the base station and provide the prompt channel quality information.

Ghosh in view of Jokiaho does not expressly teach transmitting the message when transmission quality based on one of a transmission rate and ratio of a number of elapsed timers relative to a total number of allocated timers of at least one of the subscriber stations is inadequate.

However, Lee teaches transmitting from the base station a first message (e.g. RL parameter update request message) to a controlling radio network controller allocated to the base station (See [0146] lines 7-10, [0054], and [0147] lines 2-3) when the measurements show that the transmission quality is inadequate (e.g. threshold corresponding to lower than a good channel quality, see [0164] lines 1-5, note that the change in radio link is radio channel state or condition see [0048] lines 1-5), the first message containing information about the transmission quality (See [0047]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the limitation taught by Lee in Ghosh's invention in view of Jokiaho in order to enable adaptive resource allocation based efficient channel measurement update.

Ghosh in view of Jokiaho and Lee does not teach that the transmission quality is based on transmission rate, nonetheless, Kroth teaches measurements of transmission quality are based on at least one of a transmission rate via the common channel and determining a ratio of a number of elapsed timers relative to a total number of allocated timers (See [0027] line 8, note that when measuring transmission data, timers are inherent for measuring, the data transmitted, which elapses the timer for measuring

ongoing transmission, and the time assigned for transmission of a unit data, so as is known in the art, it is the time of a given data unit divided by the allotted transmission interval).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the additional limitation taught by Kroth in Ghosh's invention in view of Jokiaho and Lee in order to determine the rate of the data frames to be transmitted in accordance with the assigned quality of service.

4 Claims 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghosh in view of Jokiaho, Lee, and Kroth as applied to claim 15 and further in view of a known Prior Art (Official Notice).

Consider claim 16, Ghosh in view of Jokiaho, Lee, and Kroth discloses the method in accordance with claim 15. Ghosh in view of Jokiaho, Lee, and Kroth does not explicitly teach the method wherein a specified transmission rate is agreed for each subscriber (note, each subscriber opts for a particular data rate as agreement between the subscriber and the service provider), and wherein said method further comprises checking compliance (e.g. testing or comparing the transmission with data rate according to the subscriber's profile) with the agreed transmission rate during said making of the measurements of the transmission quality.

However, because monitoring quality of service involves measuring the real time data transmission rate versus the subscriber's agreement of the data rate or the plan's

data rate which is well known in the art, the examiner takes official notice that it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the feature in Ghosh's invention in view of Jokiaho, Lee, and Kroth in order to track and assess the quality of service of the subscriber in accordance with service agreement.

5 Regarding claim 17, Ghosh in view of Jokiaho, Lee, and Kroth and in view of a well known prior art "known feature in the art", teaches the method according to claim 16.

Jokiaho, Lee, and the well known prior art does not teach allocating timers to data units to be transmitted; ceasing transmission of the data units after a corresponding timer has elapsed; and checking, during the making of the measurements of the transmission quality, to determine whether a number of elapsed timers relative to a total number of allocated timers exceeds a specified threshold value. However, Kroth further discloses that the method further comprises: allocating timers to data units to be transmitted; ceasing transmission of the data units after a corresponding timer has elapsed; and checking, during the making of the measurements of the transmission quality, to determine whether a number of elapsed timers relative to a total number of allocated timers (page 3, paragraph [0024], lines 10-15) exceeds a specified threshold value (paragraph [0030], lines 3 and 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the additional limitation taught by Kroth in Ghosh's invention

in view of Jokiaho, Lee and Kroth in order to determine the rate of the data frames to be transmitted in accordance with the assigned quality of service.

6 Regarding claim 18, Ghosh in view of Jokiaho, Lee, and Kroth and in view of a known feature in the art teaches the method according to claim 17. Gosh as modified by Jokiaho, Kroth, and well known prior art do not teach that the first message contains at least one of a name of each of the at least one particular subscriber station and how many of the subscriber stations for which the transmission quality was bad. Nonetheless, Lee teaches that the first message contains at least one of a name (e.g. ID, see [0008], lines 5-8, note that the RL parameter or the first message maybe HS-SCCH, see also [0030] lines 1-6) of each of the at least one particular subscriber station and how many of the subscriber stations for which the transmission quality was bad (See [0164] lines 3-5 and [0048] lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the limitation taught by Lee in Ghos's invention in view of Jokiaho, Lee, Kroth, and the known prior art because it would enable RNC to identify the UE suffering from quality of service that is below satisfactory once reported.

Consider claim 19, Ghosh in view of Jokiaho, Lee, and Kroth and in view of a known feature in the art teaches the method in accordance with claim 18, Ghosh inherently teaches wherein the second message contains the name of each of the at least one particular subscriber station, because transmitting the load report to CRNC would require retaining the ID about the particular subscriber station or more whose

transmission quality is affected.

Regarding claim 20, Ghosh in view of Jokiaho, Lee, and Kroth and in view of a known feature in the art teaches the method in accordance with claim 19, Ghosh in view of Jokiaho, Lee, and Kroth does not explicitly teach that the method further comprising allocating a temporary identification being to the subscriber stations by the controlling radio network controller, and wherein the temporary identification is used to name the subscriber stations.

The examiner takes official notice that it is well established in the art that allocating a temporary identification to the subscriber station is well known in the routing function of CRNC, the temporary ID contains the ID of the subscriber station in addition to the SRNC identifier.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the obvious feature in Ghosh's invention in view of Jokiaho, Lee, and Kroth in order for the CRNC to address the actual RNC serving the UE when UE is roaming.

Regarding claim 21, Ghosh in view of Jokiaho, Lee, and Kroth and further in view of a well know prior art the method in accordance with claim 20. Ghosh in view of Jokiaho, Lee, and a well known prior art fails to expressly teach deriving, by the controlling radio network controller, a suggested solution (see paragraph [0034], line 11) for a change of the configuration of the subscriber stations from the first message, and wherein the second message includes the suggested solution. Kroth as mentioned above further teaches the method further comprising deriving, by the controlling radio

network controller, a suggested solution (see paragraph [0034], line 11) for a change of the configuration of the subscriber stations from the first message, and wherein the second message includes the suggested solution (see paragraph [0034], lines 8-13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kroth's limitations with the invention taught by Ghosh in view of Jokiaho, Lee, Kroth and well known prior art "official notice in order to implement the compensation of the QoS in accordance with the change in channel quality.

In claim 22, Ghosh in view of Jokiaho, Lee, and Kroth and FURTHER in view of well known prior art "official notice" teaches the method in accordance with claim 21. Ghosh teaches the allocation of a dedicated channel for a corresponding one of the at least one particular subscriber station (see claim 9-10).

Ghosh in view of Jokiaho, Lee, and a well known prior art fails to teach the method wherein the suggested solution contains information on at least one of a possible transmission procedure to a different base station

Kroth further teaches the method wherein the suggested solution contains information on at least one of a possible transmission procedure to a different base station (See paragraph [0041]).

It would have been obvious to a person of ordinary skill in the art to combine the teachings of Ghosh, Jokiaho, Lee, Kroth and the well known prior Art to achieve the claimed invention since there would have been a reasonable expectation of success which is optimizing the transmission of data.

Response to Arguments

Applicant's arguments filed 04/21/2011 have been fully considered but they are not persuasive.

In regards to claims 12, 29, and 32, the Applicant submitted that Ghosh in view of Jokiaho and Lee does not disclose the limitation present in the independent claims. Namely, the Applicant submitted that Ghosh does not teach measuring the transmission quality and transmitting the measurements to the node B and then the CRNC. The Examiner respectfully disagrees, in response to Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Ghosh discloses measuring transmission quality related information and making that information available to Node B and the controller in the form of a “measurement” report (See above citation), it appears that the Applicant focused on the fact that Ghosh discloses information amongst others that is QoS requirements rather than an actual QoS. The Examiner notes that QoS information is a priori measurement to QoS requirements whether the requirements are communicated from the Node B or predetermined threshold criterion. More importantly, it is the pilot strength “common control channel” (See [0014]) that constitute a measurement that relate to quality assessment as is well within the established art, otherwise why would a pilot strength be used for, as opposed to other pilot information. Moreover, even if Ghosh didn’t infer said

feature even though he expressly disclose reporting the measurement “pilot strength”, Jokiaho supports such obviousness in a similar way as an established method in the art (See Col 8 lines 25-26). Furthermore, Lee additionally is provided to support the availability of such feature, namely Lee discloses the use of an indicator “CQI” for channel quality indication “hence the name” and reporting such measurements to the node B (See [0099]). It is clearly obvious then, One of ordinary skill in the art without due effort would have construed and constructed the limitation “feature” since it is available in the art and present claims having similar objectives.

It is have been shown then, that one of ordinary skill in the art would have found it seamless to combine the limitations as expressly disclosed in the claims of the present application for the reasons stated in the rejection. The Applicant is invited to check for himself why the “prima facie” case of obviousness has been established.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ISSAM CHAKOUR whose telephone number is (571)270-5889. The examiner can normally be reached on Monday-Thursday (8:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Perez Rafael can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/I. C./
Examiner, Art Unit 2617

/Rafael Pérez-Gutiérrez/
Supervisory Patent Examiner, Art Unit 2617